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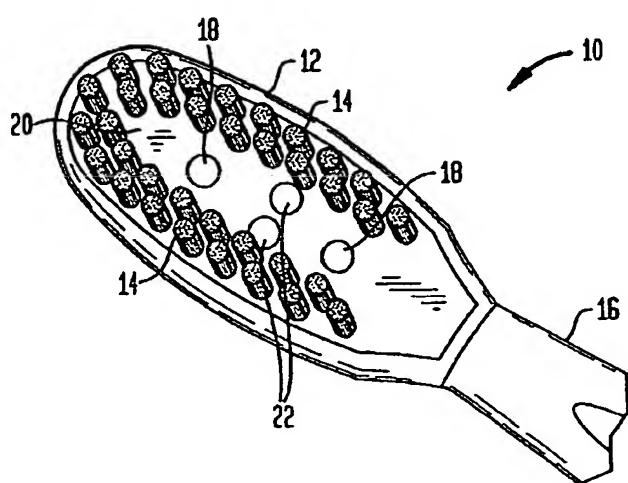
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(54) Title: LIGHT EMITTING ORAL APPLIANCE AND METHOD OF USE



(57) Abstract: Oral phototherapy applicators are disclosed that are sized and shaped so as to fit at least partially in a user's mouth with a plurality of bristles of elongate shape coupled to an apparatus body. The applicators can be adapted to brush the user's teeth and further include at least one radiation emitter to the body to provide phototherapeutic radiation to a portion of the oral cavity other than tissue in contact with the bristles. In one embodiment, the phototherapy emitter irradiates both a region of tissue in contact with the bristles and a portion of the oral cavity that is not in contact with the apparatus. For example, the apparatus can include at least one emitter that irradiates tooth tissue in contact with the bristles and gum tissue surrounding the tooth tissue.

WO 2004/084752 A3

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US2004/003951

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A61N5/06

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 A61N A46B A61Q A61B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>US 1 590 283 A (CATLIN DE FOREST B) 29 June 1926 (1926-06-29)</p> <p>page 1, column 2, line 58 – line 64 page 1, column 1, line 1 – line 5</p> <p style="text-align: center;">-/-</p>	<p>1,7,14, 44,46, 55,90, 101,144, 145,171, 183</p>

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the International filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the International filing date but later than the priority date claimed

T later document published after the International filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

& document member of the same patent family

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INTERNATIONAL SEARCH REPORT

Int'l Application No
PCT/US2004/003951

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 99/10046 A (BIEL MERRILL A ; ADVANCED PHOTODYNAMIC TECHNOLOGY (US)) 4 March 1999 (1999-03-04) page 10, line 15 - line 28; figures 11-14	1-3,7, 14,26, 29,30, 43-46, 55, 85-92, 101, 128-132, 144,145, 167-169, 171,183
X	US 6 471 716 B1 (PECUKONIS JOSEPH P) 29 October 2002 (2002-10-29) column 11, line 63 - column 12, line 65; figure 3	1-3,7, 14,26, 29,30, 43,44, 46,55, 85-87, 89,90, 92,101, 128,129, 144,145, 167-169, 171,183
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		-/-

INTERNATIONAL SEARCH REPORT

In na Application No
PCT/US2004/003951

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 927 544 A (ALTSCHULER GRIGORY BORISOVICH) 7 July 1999 (1999-07-07) the whole document	1, 4-9, 13, 14, 16, 21, 25, 31-33, 41, 47, 51-57, 59-65, 69, 72, 73, 83, 93, 97-108, 115, 116, 126, 136-148, 151, 153-155, 165, 172, 176-184, 186-188, 191, 193, 194, 205, 206, 210
X	US 3 261 978 A (BRENNAN HENRY S) 19 July 1966 (1966-07-19) column 2, line 6 - line 66	1, 6, 8, 16, 32, 33, 47, 56-59, 61, 62, 93, 98, 102, 103, 105-107, 140, 146, 155, 172, 177, 180, 205, 206
X	US 6 290 496 B1 (AZAR ZION ET AL) 18 September 2001 (2001-09-18) column 5, line 46 - column 2, line 27; figures 1, 3	1, 4, 6, 16, 32, 33, 47, 52, 56, 59, 61, 93, 98, 99, 102, 105, 106, 140, 172, 205, 206

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INTERNATIONAL SEARCH REPORT

I Final Application No
 101, JS2004/003951

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages*	Relevant to claim No.
X	US 6 086 363 A (MORAN KELLY ET AL) 11 July 2000 (2000-07-11) column 4, line 40 - line 47	1,4-6, 32,47, 52,53, 61,93, 98-100, 105,106, 140,142, 143,172, 181,182, 205,206
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		-/-

INTERNATIONAL SEARCH REPORT

national Application No

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Character of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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X	column 2, line 40 - column 3, line 37	
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Y		293-295
		-/-

INTERNATIONAL SEARCH REPORT

1. International Application No
PCT/US2004/003951

C(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 99/62472 A (WOLF ROBERT O) 9 December 1999 (1999-12-09) page 3, line 5 - page 4, line 12	291, 292, 296
Y	US 5 171 564 A (NATHOO SALIM A ET AL) 15 December 1992 (1992-12-15) column 3, line 55 - line 57 column 4, line 22 - line 27	293, 295
Y	US 2002/018754 A1 (SAGEL PAUL ALBERT ET AL) 14 February 2002 (2002-02-14) paragraph '0038!	294
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INTERNATIONAL SEARCH REPORTInternational application No.
PCT/US2004/003951**Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.: 211-274, 288-290
because they relate to subject matter not required to be searched by this Authority, namely:
Rule 39.1(iv) PCT - Method for treatment of the human or animal body by therapy
2. Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
1-17, 21, 25-35, 41, 43-47, 51-77, 83-93, 97-120, 126-132, 136-159, 165-172, 176-199
205, 206, 210, 291-296
4. No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.1

Claims Nos.: 211-274, 288-290

Rule 39.1(1v) PCT - Method for treatment of the human or animal body by therapy

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1, 2, 3, 7, 14, 26-30, 43-46, 55, 85-92,
101, 128-132, 144, 145, 167-171, 183

Oral phototherapy applicator having specific shape

2. claims: 4, 16, 33, 52-54, 56-59, 99, 100, 102, 103, 142, 143,
181, 182

Oral phototherapy applicator having a specific spectrum

3. claims: 18-20, 36-40, 78-82, 121-125, 160-164, 200-204,

Oral phototherapy applicator having means for applying or
extracting heat

4. claims: 5, 6, 8-13, 15, 21, 25, 31, 32, 41, 47, 51, 60-74, 83,
84, 93, 97, 98, 104-117, 126, 127,
136-141, 146-156, 165, 166, 172,
176-180, 184-196, 205, 206, 210

Oral phototherapy applicator having means for directing or
guiding radiation

5. claims: 17, 34, 35, 75-77, 118-120, 157-159, 197-199

Oral phototherapy applicator having monitoring means
providing feedback

6. claims: 22-24, 42, 48-50, 94-96, 133-135, 173-175, 207-209

Oral phototherapy applicator having means for additional
therapy

7. claims: 275-287, 297

Method of whitening teeth

8. claims: 291-296

Tooth-whitening film

INTERNATIONAL SEARCH REPORT

Information on patent family members

Final Application No

PCT/JS2004/003951

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Inventor's name
International Application No
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